Roadside Safety Pooled Fund

Research Problem Statement

Project Title:	Determination of the Length-of-Need for Guardrail without Anchorage Phase 3: Design Improvements (2024-12-LSRB)
Project Synopsis:	Phase II of the Unanchored Guardrail project suffered setbacks during crash testing. In both *MASH* tests 3-11, the system failed to redirect the vehicle and the w-beam guardrail separated from the posts. This project is aimed at developing a solution for maintaining connectivity between the w-beam rail and the posts when no downstream anchorage exists.
Project Goal(s):	Develop a *MASH* compliant system for w-beam guardrail without downstream anchorage.
Project Background:	Phase I the Unanchored Guardrail project included a computer simulation effort to determine the minimum length-of-need required to maintain containment and redirection of impacting vehicles without a downstream anchor or terminal. Phase II included two *MASH* 3-11 crash tests. The first test exhibited rail separation from the posts, and the installation failed to redirect the vehicle. The research team subsequently improved the computer simulation models and redetermined the minimum length-of-need for a w-beam guardrail system without downstream anchorage. This length was determined to be too long for practical field use, and therefore, guardrail washers were investigated for improved redirection of the vehicle. The guardrail system was installed with washers at the two end posts, and *MASH* test 3-11 was conducted. Again, the rail separated from the posts, and the installation failed to redirect the vehicle. This project is aimed at developing an improved mechanism for maintaining connectivity between the rail and the posts.
Proposed Work Plan:	Task 1: Component Testing Task 2: Computer Simulation Task 3: *MASH* Crash Testing
Deliverables:	Final report document project efforts.
Urgency and Expected Benefit:	Certain situations prevent proper anchorage for w-beam guardrail. In these cases, guidance is needed to safely install the system before the anchorage is installed. This project will allow the Roadside Safety Pooled Fund to safely protect errant motorists from roadside hazards under these conditions. Furthermore, this project will continue the previously completed work pursuing this objective.
Problem Funding and Research Period:	**Total Estimated Cost = TBD** **Total Estimated Time = TBD**
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